

ABSTRACT

5 A radiation-sensitive medium comprises hydrophilic polymer particles, the particles comprising a thermally softenable hydrophobic polymer, a hydrophilic polymer and a bonding compound capable of chemically bonding to the hydrophobic polymer and to the hydrophilic polymer. Th radiation-sensitive medium further may comprise a substance capable of converting radiation into heat. The radiation-sensitive medium is aqueous-ineluable when coated and dried, and becomes
10 hydrophobic under the action of heat. The polymer particles are made by polymerization of at least one hydrophobic monomer and at least one bonding compound in the presence of the hydrophilic polymer. The radiation-sensitive medium may be provided as a coatable composition to be applied to substrates to form a processless radiation-imageable lithographic printing precursor. The processless radiation-imageable lithographic printing precursor so created may be
15 imaged using absorbed radiation that is imagewise converted to heat, resulting in areas of hydrophobic property, while unimaged areas retain their hydrophilic property. This allows the latent image so formed to be employed in creating a negative-working lithographic printing master. The negative-working lithographic printing master so created is irreversible, does not require a substrate of controlled hydrophilicity and provides great toughness in the exposed areas. The
20 radiation-sensitive medium may be coated on-platesetter or on-press onto a suitable substrate, including the drum of the press. It may also be coated off-press on a suitable substrate to create a precoated processless radiation-imageable lithographic printing precursor.